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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,569	11/06/2001	Hajime Kimura	SEL 288	8170

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COOK, ALEX, McFARRON, MANZO,
CUMMINGS & MEHLER, LTD.
SUITE 2850
200 WEST ADAMS STREET
CHICAGO, IL 60606

EXAMINER	
JORGENSEN, LELAND R	
ART UNIT	**PAPER NUMBER**
2675	6

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/992,569	KIMURA, HAJIME	
	Examiner	Art Unit	
	Leland R. Jorgensen	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 144* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2, 3, 6 – 19, 25 – 34, and 43 – 144* is/are allowed.

6)☒ Claim(s) *1, 4, 5, 20, 22, 24, and 35 - 42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. In view of applicant's amendment and response filed 10 May 2004, the objection to the drawings under 37 CFR 1.83(a) is withdrawn.

Claim Rejections - 35 USC § 112

2. In view of applicant's amendment and response filed 10 May 2004, the rejection of claims 21, 23, 26, 28, 31, 33, 84, 86, 89, 91, 94, 96, 99, and 101 under 35 U.S.C. 112, second paragraph, is withdrawn.

Double Patenting

3. In view of applicant's amendment and response filed 10 May 2004, the proposed objections to claims 23, 28, 33, 86, 91, or 96 under 37 CFR 1.75 is withdrawn.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 4, 5, 20, 22, 24, and 35 - 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Dawson et al., USPN 6,229,506 B1.

Claim 1

Dawson teaches a light emitting device comprising a plurality of pixels. Dawson, col. 6, lines 56 – 60; and figure 5. Each of the plurality of pixels [pixel structure 200] comprises an EL driving TFT [PMOS transistor 260 (P2)]; an electric discharge TFT [PMOS transistor 250 (P1)]; an EL element [OLED 290]; a reference power supply line [Data line 220]; a switching TFT [transistor 240(P4P]; and a source signal line [select line 210]. Dawson, col. 3, lines 11 – 22; and figure 2. A source region of the EL driving TFT is connected to the power supply line [V_{DD} 295 through NMOS transistor 270 (N1)] and a drain region of the EL driving TFT is connected to a pixel electrode of the EL element. Dawson, col. 3, lines 11 – 22; and figure 2. A drain region of the electric discharge TFT is connected to the power supply line [through NMOS transistor 270 (N1)] and a source region of the electric discharge TFT is connected to the reference power supply line. The gate electrode of the EL driving TFT is connected to the source signal line through the switching TFT. Dawson, col. 3, lines 11 – 22; and figure 2.

Claims 4 and 5

Dawson teaches a light emitting device comprising a plurality of pixels. Dawson, col. 6, lines 56 – 60; and figure 5. Each of the plurality of pixels [pixel structure 200] comprises an EL driving TFT [PMOS transistor 260 (P2)]; an electric discharge TFT [PMOS transistor 250 (P1)]; an EL element [OLED 290] ; a reference power supply line [Data line 220]; a switching TFT [transistor 240(P4P]; and a source signal line [select line 210]. Dawson, col. 3, lines 11 – 22; and figure 2. A source region of the EL driving TFT is connected to the power supply line [V_{DD} 295 through NMOS transistor 270 (N1)] and a drain region of the EL driving TFT is connected to a pixel electrode of the EL element. The gate electrode of the EL driving TFT is

connected to the source signal line through the switching TFT. Dawson, col. 3, lines 11 – 22; and figure 2. A drain region of the electric discharge TFT is connected to the power supply line [through NMOS transistor 270 (N1)]. Dawson, col. 3, lines 11 – 22; and figure 2.

Dawson teaches that a predetermined electric potential [through constant current source 230] is applied to a source region of each of the plurality of electric discharge TFTs. Dawson, col. 3, lines 32 – 53. A current flows through a channel formation region of each of the plurality of electric discharge TFTs when each of the plurality of EL elements does not emit light. Dawson, col. 3, line 55 – col. 4, line 5. Each of the plurality of electric discharge TFTs is turned OFF when each the plurality of EL elements emits light. Dawson, col. 3, line 32 – col. 4, line 5. A current flows through a channel formation region of each of the plurality of EL driving TFTs when each of the plurality of EL elements emits light. Dawson, col. 3, lines 32 – 53.

Claim 20

Dawson teaches that the source region of the electric discharge TFT [PMOS transistor 250 (P1)] is connected to a first current controlling element [current source 230], and that the source region of the electric discharge TFT [PMOS transistor 260 (P2)] receives a given electric potential through the first current controlling element. Dawson, col. 3, lines 32 – 53; and figure 2.

Claim 22

Dawson teaches that drain region of the electric discharge TFT [PMOS transistor 250 (P1)] is connected to the power supply line through a second current controlling element [NMOS transistor 270 (N1)]. Dawson, col. 3, lines 11 – 22; and figure 2.

Claims 24, 38, 42

Dawson teaches that an electronic device that comprises the light emitting device. Dawson, col. 7, lines 7 – 13.

Claims 35, 39

Dawson teaches that switching of the plurality of EL driving TFTs and the plurality of electric discharge TFTs is controlled by digital video signals inputted to the gate electrodes of the plurality of EL driving TFTs and the gate electrodes of the plurality of electric discharge TFTs. Dawson, col. 3, lines 11 – 22; and figure 2.

Claims 36, 40

Dawson teaches that the digital video signals are inputted to the gate electrodes of the plurality of EL driving TFTs and the gate electrodes of the plurality of electric discharge TFTs through respective switching TFTs. Dawson, col. 3, lines 11 – 22; and figure 2.

Claims 37, 41

Dawson teaches that the switching TFTs and the electric discharge TFTs have the same polarity. Dawson, col. 3, lines 11 – 22; and figure 2.

Claim Rejections - 35 USC § 103

6. Claims 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson in view of Sedra and Smith, *Microelectronic Circuits*, 3rd ed. (New York; Saunders College Publishing, 1991) pp. 462 – 466.

Claims 21 and 23

Neither Takemura, Sano, nor Dawson teach that the first current controlling element is one of a resistor, a diode, and a TFT.

Sedra and Smith teach a current controlling element that is one of a resistor [output resistance R_O], a diode [D1 or D2], and a TFT [Q1 – Q3]. Sedra and Smith, pp. 462 – 466; and figure 6.41.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the current controlling element of Sedra and Smith with the light emitting device of Dawson or of Takemura, Sano, and Dawson to increase the output resistance of the current source to create a constant current source.

Allowable Subject Matter

7. Claims 2, 3, 6 – 19, 25 – 34, and 43 – 144 are allowed.

8, The following is a statement of reasons for the indication of allowable subject matter:

Examiner has found no other prior art that anticipates or suggests the invention described in claim 3. Compare, for example, applicant's claims with figure 1 of the specifications, and figure 1 of Bae et al., USPN 6,380,688 B1.

Claims	Specification	Bae
EL driving TFT	103	Qd
electric discharge TFT	104	none
EL element	105	Ed
power supply line	Vi	Vdd

reference power supply line	Cj	Vss
switching TFT	102	Qs
source signal line	Gj	12

Bae does not teach the electric discharge TFT. As described in many of the claims, the electric discharge TFT is electrically connected between the power supply line and the reference power supply so that its is off when the EL element is ON but current flows from the power supply line to the reference power supply line when the EL element is OFF.

Examiner rejected claim 2 under 35 U.S.C. 103 as unpatentable over Takemura, 5,576,857, in view of Sano, USPN 6,628,363. Applicant argued that Takemura does not teach a power supply line and that Ym is the source signal line rather than a power supply line. Examiner agrees.

Examiner rejected claim 3 under 35 U.S.C. 102(e) as anticipated by Dawson. In response, applicant argued that Dawson does not teach that the electric discharge TFT controls the amount of a current supplied from the power supply line to the reference power supply line. Examiner, after re-examining Dawson, specifically Dawson, col. 3, lines 22 – 54; and figure 2, agrees.

Claims 6 – 15, 17, and 19 are allowed as teaching the various operational details of the electric discharge TFT. Neither Bae, Takemura, nor Dawson teaches these limitations.

Examiner rejected claim 16 under 35 U.S.C. 102(e) as anticipated by Dawson. In response, applicant argued that Dawson does not teach that the source of the electric discharge TFT is connected to a gate signal line. Examiner agrees.

Examiner rejected claim 3 under 35 U.S.C. 102(e) as anticipated by Dawson. In response, applicant argued that Dawson does not teach that the electric discharge TFT is connected to an opposite electrode of the EL element. Examiner agrees.

In claims 127, 133, and 139, applicant broadens the claims to exclude details found in the prior claims. Applicant, however, still include those elements already distinguished over the prior art cited above. Specifically, claim 127 includes that the electric discharge TFT controls the amount of current supplied from the power supply line to the reference power supply line when the EL driving TFT is turned OFF. Claim 133 describes a switch as a broadening of the electric discharge TFT that is electrically disposed between the power supply line and the reference supply line that is ON when the EL driving TFT is OFF. Claim 139 teaches that the gate of the electric discharge TFT is connected to the gate of the EL driving TFT.

Claims 25 – 34, 43 – 126, 128 – 132, 134 – 138, and 140 - 144 each are dependent on one of allowed claims 2, 3, 6 – 19, 127, 133, or 139.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leland R. Jorgensen whose telephone number is 703-305-2650. The examiner can normally be reached on Monday through Friday, 7:00 a.m. through 3:30 p.m..

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

lrj

DENNIS-DOON CHOW
PRIMARY EXAMINER